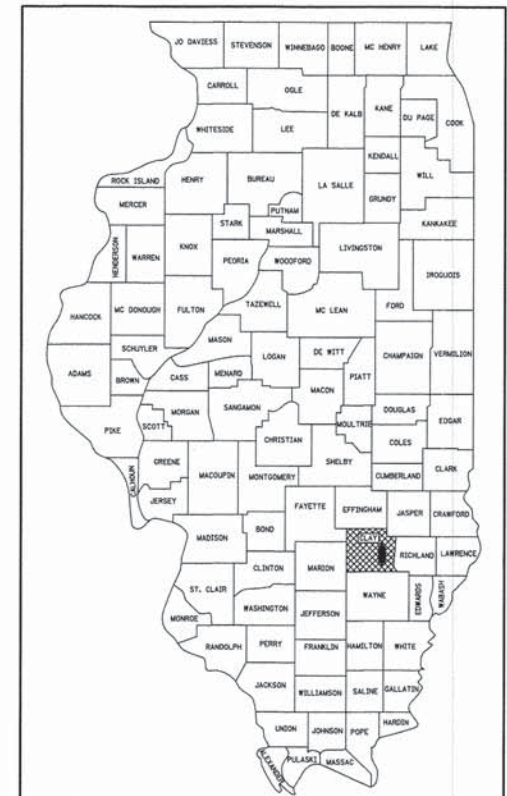


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
**PLANS FOR PROPOSED
STP - BRIDGE**

**TR 280 (LEAD DRIVE)
FLAT BRANCH CREEK
SECTION 09-05103-00-BR
PROJECT NO. BROS-025(078)
HOOSIER ROAD DISTRICT
CLAY COUNTY
JOB NO. C-97-062-12**



LOCATION OF SECTION INDICATED THUS:

CLAY COUNTY
HIGHWAY DEPARTMENT

APPROVED 12/18, 2013
Michael R. Quardt
CLAY COUNTY, COUNTY ENGINEER

PASSED 1-2, 2014
Maurice L. Cast
DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID
BASED ON LIMITED
REVIEW 1-2, 2014
Roger L. Quibell
DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

CONTRACT NO. 95727

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 280	09-05103-00-BR	CLAY	11	1
CONTRACT NO. 95727				
RAAI JOB NO. 52011		ILLINOIS		

INDEX OF SHEETS

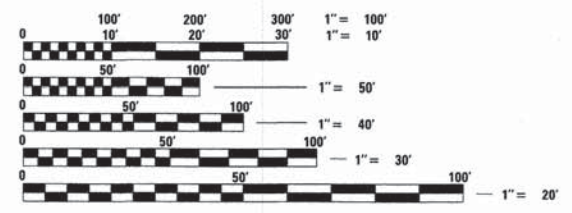
- COVER SHEET
- SUMMARY OF QUANTITIES, GENERAL NOTES, AND TYPICAL SECTIONS
- PLAN AND PROFILE OF ROADWAY
- GENERAL PLAN AND ELEVATION
- 5.-6. PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS
7. STEEL RAILING, TYPE S1 DETAILS
8. ABUTMENT DETAILS
9. HP PILE DETAILS
- 10.-11. CROSS SECTIONS OF ROADWAY

HIGHWAY STANDARDS

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 280001-07 TEMPORARY EROSION CONTROL SYSTEMS
- 515001-03 NAME PLATE FOR BRIDGES
- 635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 701901-03 TRAFFIC CONTROL DEVICES
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

SOIL BORINGS (SEE SPECIFICATIONS)

DESIGN CLASSIFICATION: RURAL LOCAL ROAD
ADT₂₀₁₂ : 75
ADT₂₀₃₂ : 100
DESIGN SPEED - 30 MPH



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES, REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES, IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS
1-800-892-0123 or 811 Website: <http://www.illinois1call.com>



Gary L. Hahn 12-16-2013
GARY L. HAHN
CENTRALIA, ILLINOIS
ILLINOIS LICENSED PROFESSIONAL
ENGINEER NO. 62-42606
EXPIRES NOV. 30, 2015

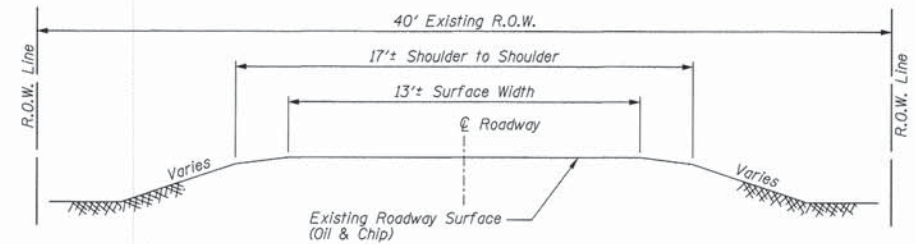


SECTION ENDS
STA. 53+48.69

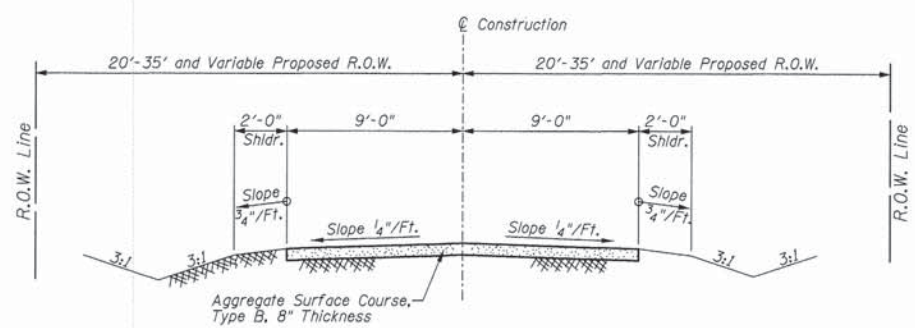
SECTION 09-05103-00-BR INCLUDES THE CONSTRUCTION OF A SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE CARRYING TR 280 OVER FLAT BRANCH CREEK 51'-4 1/2" BK. TO BK. ABUTMENTS X 24' WIDE. 15° AHEAD LEFT SKEW. EXISTING STRUCTURE NO. 013-3107 PROPOSED STRUCTURE NO. 013-3240

SECTION BEGINS
STA. 46+97.31

LOCATION: NEAR THE NW CORNER, NW 1/4, SE 1/4, SECTION 34, T4N, R7E, 3RD P.M.
NET LENGTH OF PROJECT: 651.38 FT = 0.123 MI

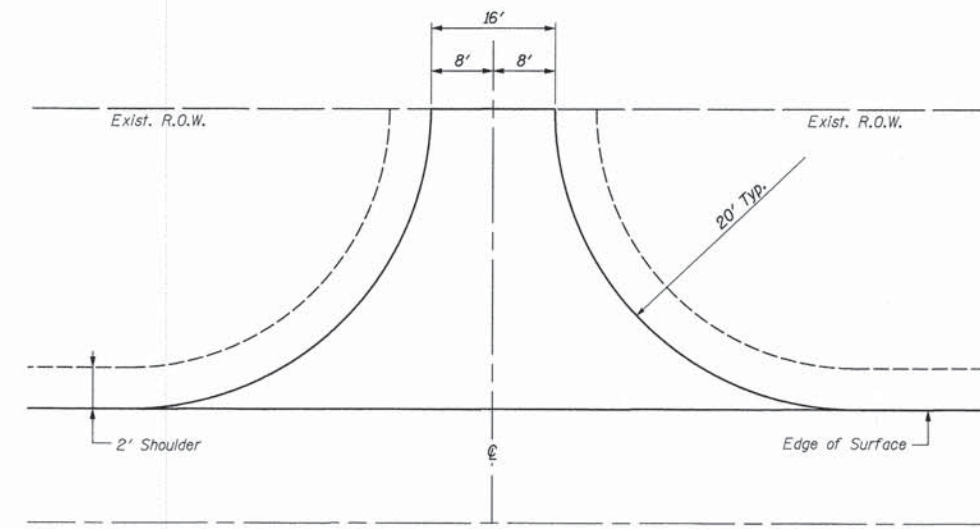


**TYPICAL SECTION
EXISTING APPROACH ROADWAY**



**TYPICAL SECTION
PROPOSED APPROACH ROADWAY**

Sta. 47+22.31 to Sta. 49+77.31
Sta. 50+28.69 to Sta. 52+73.69
Trans. Sta. 46+97.31 to Sta. 47+22.31
and Sta. 52+73.69 to Sta. 53+48.69



**TYPICAL PRIVATE ENTRANCE
Rt., STA. 47+86**

Aggregate Surface Course, Type B 6" Depth - 12 Ton
(Included in Summary of Quantities)

UTILITIES

Design Phase Locate: A1350348
Telephone: Wabash Telephone Coop
Todd A. Fender
P.O. Box 299
210 S. Church
Louisville, IL 62858
Phone: 618-665-3311
or 800-228-9824

Electric: Clay County Electric Coop
7784 Old Highway 50
PO Box 517
Flora, IL 62839
Phone: 618-662-2171

Water: E.J. Water Coop.
Lee Beckmann
108 S. Main St.
Dietrich, IL 62424
Phone: 217-347-7262

SUMMARY OF QUANTITIES

Code No.	Item	Unit	Quantity
20100500	TREE REMOVAL, ACRES	ACRE	0.3
20200100	EARTH EXCAVATION	CU YD	244
20300100	CHANNEL EXCAVATION	CU YD	145
20400800	FURNISHED EXCAVATION	CU YD	488
28000305	TEMPORARY DITCH CHECKS	FOOT	40
*** 28100807	STONE DUMPED RIPRAP, CLASS A4	TON	170
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	553
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	25.8
50300280	CONCRETE ENCASEMENT	CU YD	2.8
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	1200
50800105	REINFORCEMENT BARS	POUND	3860
* 50900205	STEEL RAILING, TYPE S1	FOOT	103
51201600	FURNISHING STEEL PILES HP12X53	FOOT	224
51202305	DRIVING PILES	FOOT	224
51203600	TEST PILE STEEL HP12X53	EACH	1
51204650	PILES SHOES	EACH	8
51500100	NAME PLATES	EACH	1
54200220	PIPE CULVERTS, CLASS C, TYPE 1 15"	FOOT	30
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	48
67100100	MOBILIZATION	L SUM	1
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.4
** XX003920	LOW WATER CROSSING	L SUM	1

* Specialty Item
** See Special Provisions

*** Break down for Stone Dumped Riprap:
95 Ton - Under bridge
35 Ton - Riprap pads at ditches
40 Ton - At Low Water Crossing

GENERAL NOTES

- This section shall be constructed according to the plans, the Special Provisions, and the "Standard Specifications for Road and Bridge Construction", adopted January 1, 2012.
- Roadway Centerline profiles refer to the finished surface.
- If Ash trees are removed on the Project, the Contractor shall become familiar with and comply with measures specified by the Illinois Department of Agriculture (IDOA) to prevent the spread of the Emerald Ash Borer. The IDOA information for Ash tree removal can be found on the IDOA website at www.agr.state.il.us/eab.
- Existing utilities shown are located from surface observations or information provided by the respective utilities and must be considered approximate. There may be others, the exact location of which are unknown and not shown. The Contractor will be responsible for notifying the respective utilities before work is begun. Field marking of underground utilities may be obtained by providing a minimum of 48 hours advance notice through the J.U.L.I.E. system by calling 1-800-892-0123, 811, or by direct contact with non-members of J.U.L.I.E.
- The Aggregate Surface Course, Type B gradation shall be CA 6 or CA 10. Only crushed stone will be approved for use on this project.
- The nominal thickness for surface course is shown on the Typical Sections, Standards, Schedules, or Special Details. The constructed thickness of the above item shall not be less than 90 percent of the nominal thickness at any location.
- Factors used for quantity calculations are as follows:
Porous Granular Embankment 2.1 tons/cu. yd.
Stone Dumped Riprap 130 pounds/cu. ft.
Aggregate Surface Course 2.1 tons/cu. yd.
- Commitments: None as of November 30, 2013.

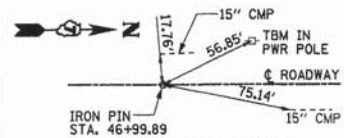
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT	REVISED -
DRAWN - JN	REVISED -
CHECKED - GLH	REVISED -
DATE - 12/12/2013	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF QUANTITIES, GENERAL NOTES, AND TYPICAL SECTIONS
STRUCTURE NO. 013-3240**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 280	09-05103-00-BR	CLAY	11	2
RAAT JOB NO. 52011			ILLINOIS FED. AID PROJECT	
CONTRACT NO. 95727				

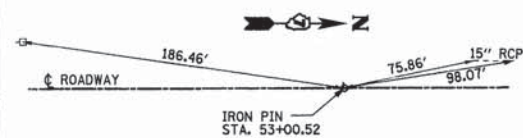


LINE TIES
STA. 46+99.89



SCALES:
HORIZ. - 0 50 100
VERT. - 0 5 10

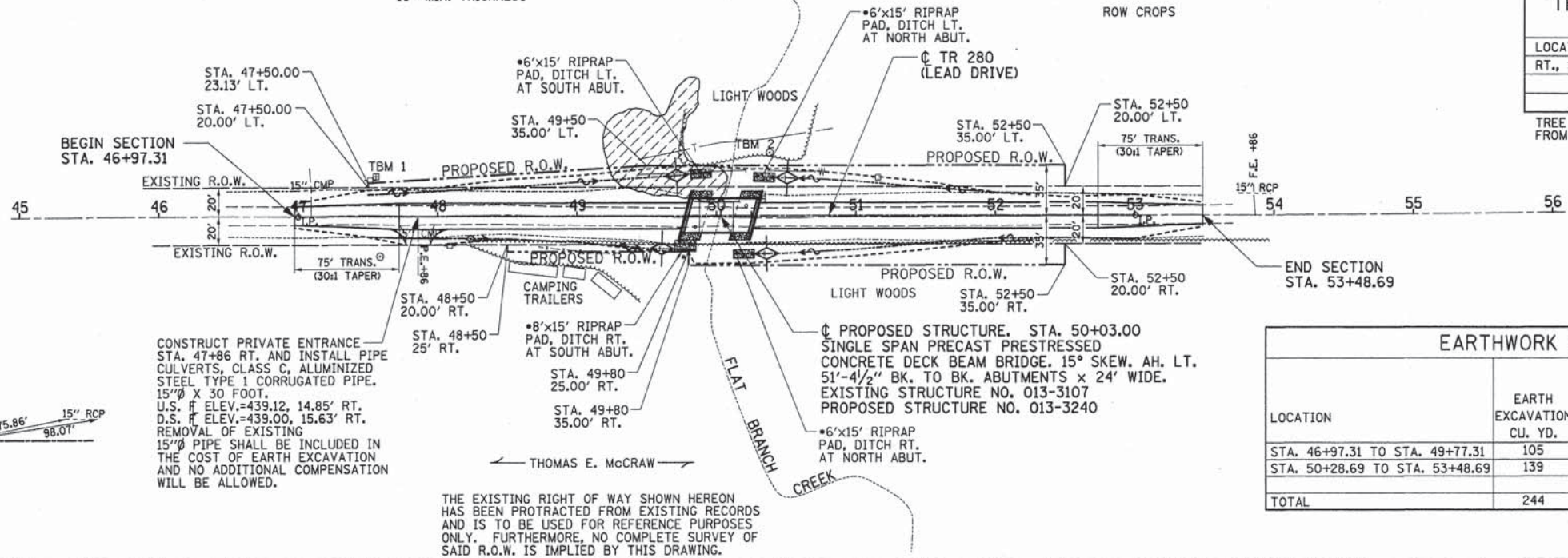
--- LIMITS OF CONSTRUCTION
◇ TEMPORARY DITCH CHECK



LINE TIES
STA. 53+00.52

LIMITS OF JURISDICTIONAL WETLAND. DURING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS, THE WETLAND SHALL NOT BE DISTURBED OUTSIDE THE LIMITS OF CONSTRUCTION.

•STONE DUMPED RIPRAP, CLASS A4
16" MIN. THICKNESS



EXISTING STRUCTURE: SINGLE SPAN BRIDGE WITH CONCRETE DECK ON STEEL STRINGERS SUPPORTED ON CLOSED CONCRETE ABUTMENTS WITH CONCRETE WINGWALLS. 24" L. x 21" W. NO SKEW. TO BE REMOVED. SEE SPECIAL PROVISIONS FOR SALVAGE. TELEPHONE CONDUIT ON NORTH SIDE IS AN ABANDONED LINE TO BE REMOVED BY CONTRACTOR.

TREE REMOVAL, ACRES	
LOCATION	ACRES
RT., STA. 48+50 TO 52+50	0.3
TOTAL	0.3

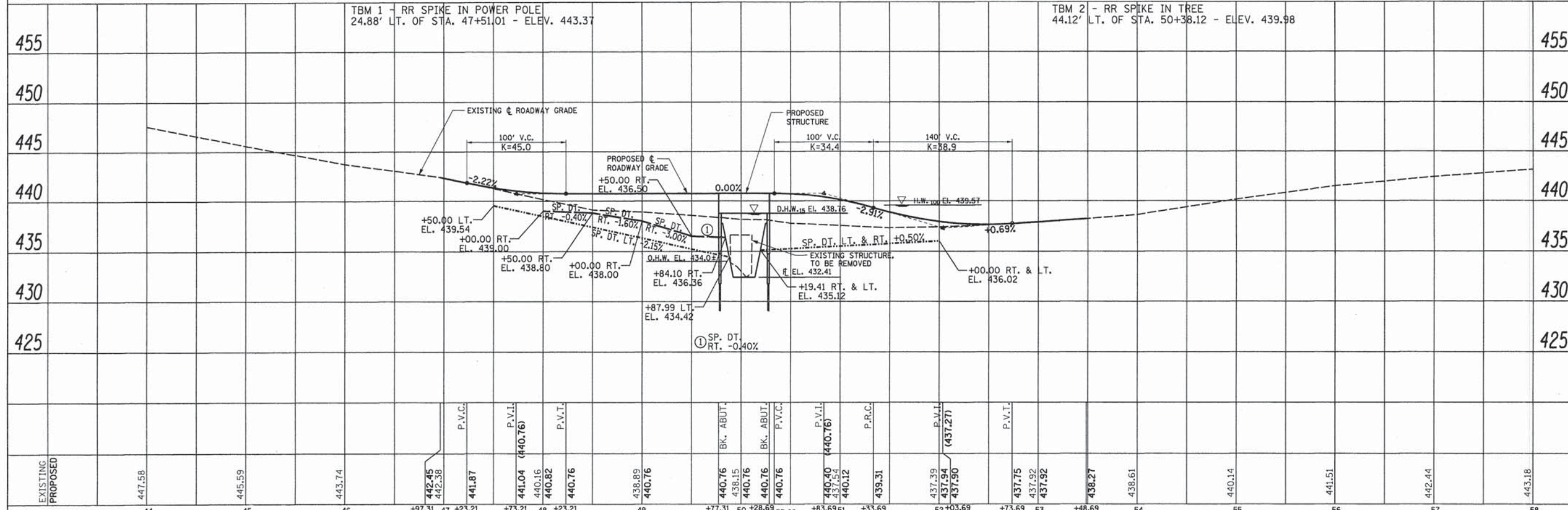
TREE REMOVAL QUANTITY CALCULATED FROM ϕ ROADWAY TO PROPOSED R.O.W.

EARTHWORK SCHEDULE				
LOCATION	EARTH EXCAVATION CU. YD.	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE* CU. YD.	EMBANKMENT CU. YD.	EARTHWORK BALANCE** WASTE (+) OR SHORTAGE (-) CU. YD.
STA. 46+97.31 TO STA. 49+77.31	105	79	314	-235
STA. 50+28.69 TO STA. 53+48.69	139	105	358	-253
TOTAL	244	184	672	-488

*25% SHRINKAGE **FURNISHED EXCAVATION

CONSTRUCT PRIVATE ENTRANCE STA. 47+86 RT. AND INSTALL PIPE CULVERTS, CLASS C, ALUMINIZED STEEL TYPE 1 CORRUGATED PIPE, 15" ϕ X 30 FOOT. U.S. \bar{x} ELEV.=439.12, 14.85' RT. D.S. \bar{x} ELEV.=439.00, 15.63' RT. REMOVAL OF EXISTING 15" ϕ PIPE SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE EXISTING RIGHT OF WAY SHOWN HEREON HAS BEEN PROTRACTED FROM EXISTING RECORDS AND IS TO BE USED FOR REFERENCE PURPOSES ONLY. FURTHERMORE, NO COMPLETE SURVEY OF SAID R.O.W. IS IMPLIED BY THIS DRAWING.



DESIGNED - BLT	REVISIED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PLAN AND PROFILE OF ROADWAY STRUCTURE NO. 013-3240	ROUTE	SECTION	COUNTY	TOTAL SHEETS	
DRAWN - JN	REVISIED -			TR 280	09-05103-00-BR	CLAY	11	3
CHECKED - GLH	REVISIED -			CONTRACT NO. 95727				
DATE - 12/12/2013	REVISIED -			RAAI JOB NO. 52011 ILLINOIS				

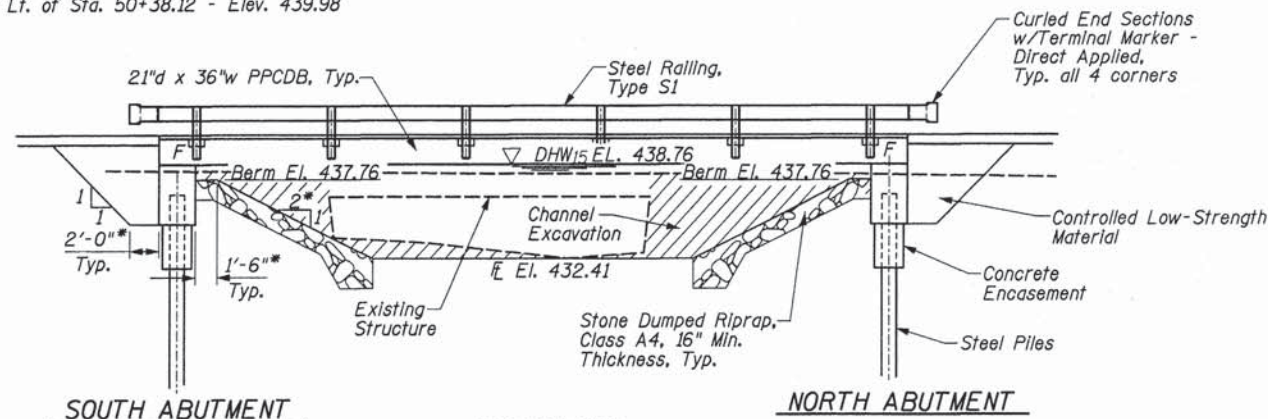
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DATE	BY	DATE	BY

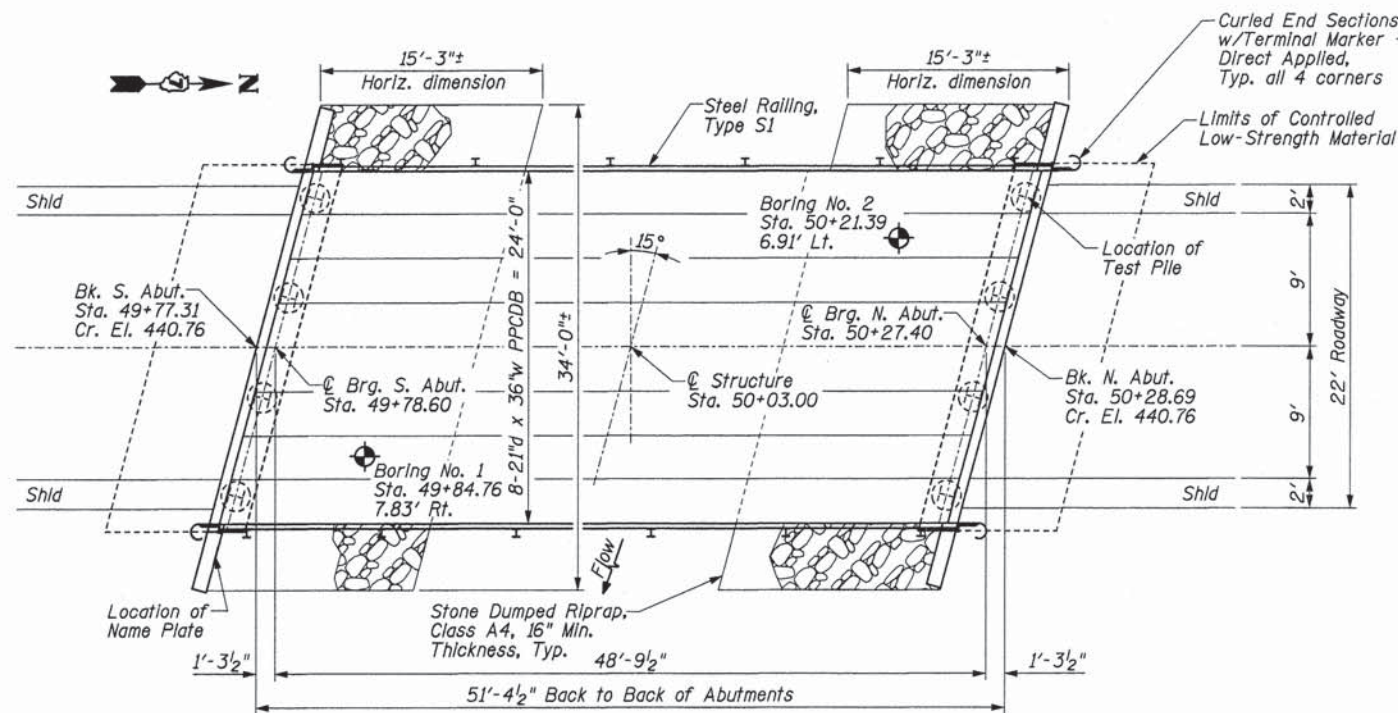
DATE	BY	DATE	BY

TBM 1 - RR spike in Power Pole
24.88' Lt. of Sta. 47+51.01 - Elev. 443.37

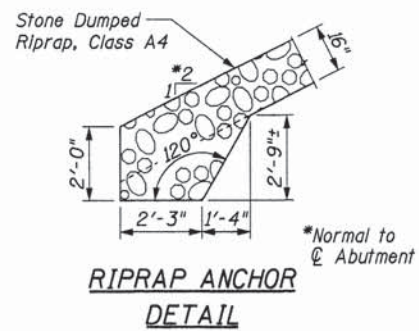
TBM 2 - RR spike in tree,
44.12' Lt. of Sta. 50+38.12 - Elev. 439.98



ELEVATION
*Normal to \odot Abut.



PLAN



**RIPRAP ANCHOR
DETAIL**

WATERWAY INFORMATION

Drainage Area = 4.92 sq. mi. Exist. Low Grade Elev. 437.31 @ Sta. 51+50
Prop. Low Grade Elev. 437.66 @ Sta. 52+46.86

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E. Exist.	Nat. H.W.E. Prop.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	1180	76	221	438.76	-	0.69	-	439.45	-
Base	100	1850	76	221	439.57	-	0.55	-	440.12	-
Max. Calc.	500	2480	76	221	440.11	-	0.54	-	440.65	-

FLAT BRANCH CREEK
BUILT 201_ BY
CLAY COUNTY
SEC. 09-05103-00-BR
TR 280 STA. 50+03.00
STR. NO. 013-3240 LOADING HL-93

NAME PLATE
See Std. 515001

LOADING HL-93
50#/sq. ft. Included in dead load for future wearing surface.

DESIGN SPECIFICATIONS
2010 (5th Ed.) AASHTO LRFD
Bridge Design Specifications

DESIGN STRESSES

FIELD UNITS

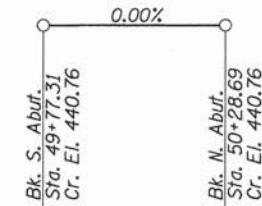
$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)

PRECAST PRESTRESSED UNITS

$f'_c = 6,000$ psi
 $f'_{ci} = 5,000$ psi
 $f_{pu} = 270,000$ psi ($\frac{1}{2}$ " ϕ low lax. strands)
 $f_{pbt} = 201,960$ psi ($\frac{1}{2}$ " ϕ low lax. strands)
 $f_y = 60,000$ psi (reinforcement)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Soil Site Classification = C
 $S_{D1} = 0.179$ $S_{D5} = 0.479$



GRADE ON STRUCTURE
(along \odot TR 280)

I certify that to the best of knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Standard Specifications for Highway Bridges.



William D. Lueking
William D. Lueking
12/16/2013
Date of Signing
11/30/2014
Date of License Expiration

Existing Structure: Structure No. 013-3107. Single span bridge with concrete deck on steel stringers supported on closed abutments with concrete wingwalls. 24' L. x 21' W. No skew. To be removed. See Special Provisions for salvage.

BILL OF MATERIALS (BRIDGE ONLY)

ITEM	UNIT	TOTAL
Channel Excavation	Cu Yd	145
Stone Dumped Riprap, Class A4	Ton	95
Removal of Existing Structures	Each	1
Concrete Structures	Cu Yd	25.8
Concrete Encasement	Cu Yd	2.8
PPCDB (21" Depth)	Sq Ft	1200
Reinforcement Bars	Pound	3860
Steel Railing, Type S1	Foot	103
Furnishing Steel Piles HP12x53	Foot	224
Driving Piles	Foot	224
Test Pile Steel HP12x53	Each	1
Pile Shoes	Each	8
Name Plates	Each	1
Controlled Low-Strength Material	Cu Yd	48
Terminal Marker - Direct Applied	Each	4

GENERAL NOTES

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

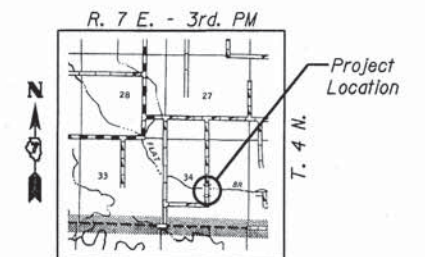
Channel excavation shall be excavated as shown within the limits of the proposed bridge, then tapered to the existing channel at the ROW line. If the Engineer deems the material satisfactory, it may be used to construct the roadway embankment.

The Contractor is hereby advised that very stiff soils may be encountered prior to the location of anticipated nominal required bearing. See the soil borings for further information.

See Special Provisions for Soil Borings.

Do not scale these drawings.

The abutment bearing seat surfaces for the precast prestressed concrete deck beams shall be adjusted by shimming to assure firm and even bearing. As required, 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing. The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.



LOCATION SKETCH

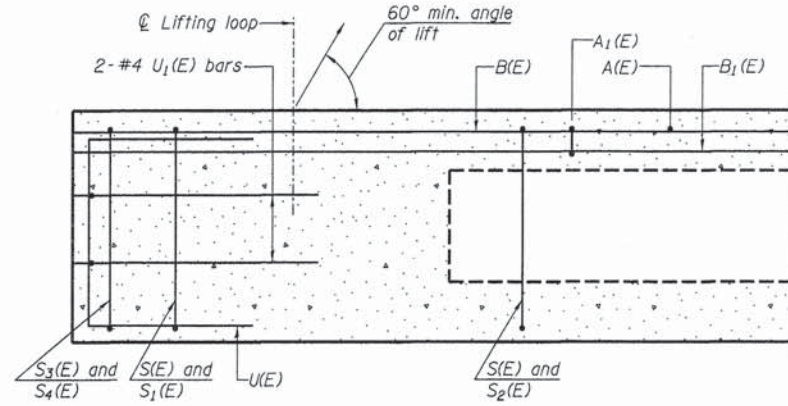
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT	REVISED -
CHECKED - WDL	REVISED -
DRAWN - JN	REVISED -
CHECKED - 12/12/2013	REVISED -

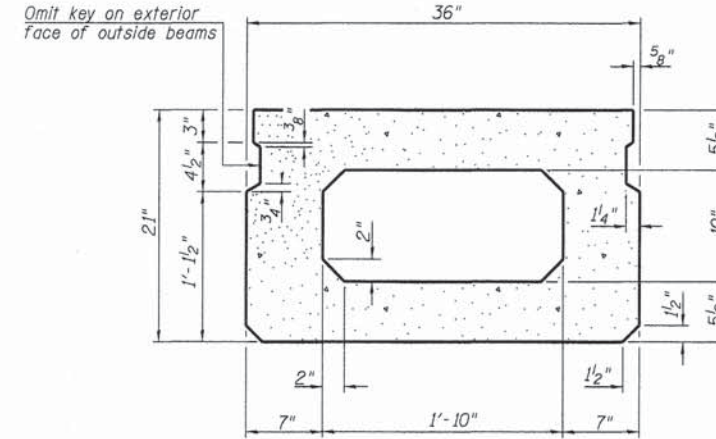
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN AND ELEVATION
STRUCTURE NO. 013-3240**

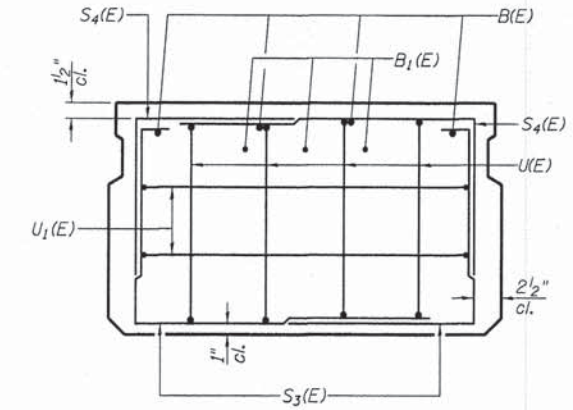
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 280	09-05103-00-BR	CLAY	11	4
CONTRACT NO. 95727				
RAAI JOB NO. 52011		ILLINOIS FED. AID PROJECT		



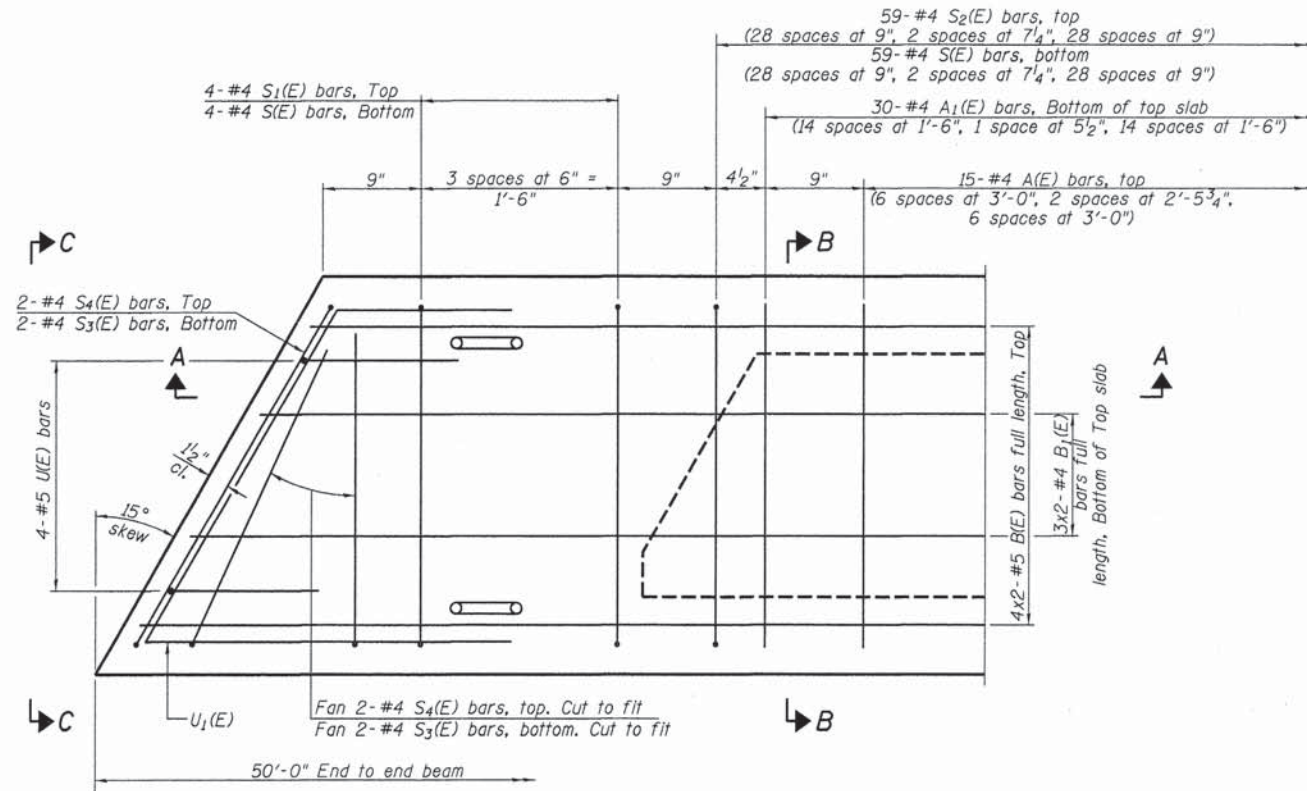
SECTION A-A



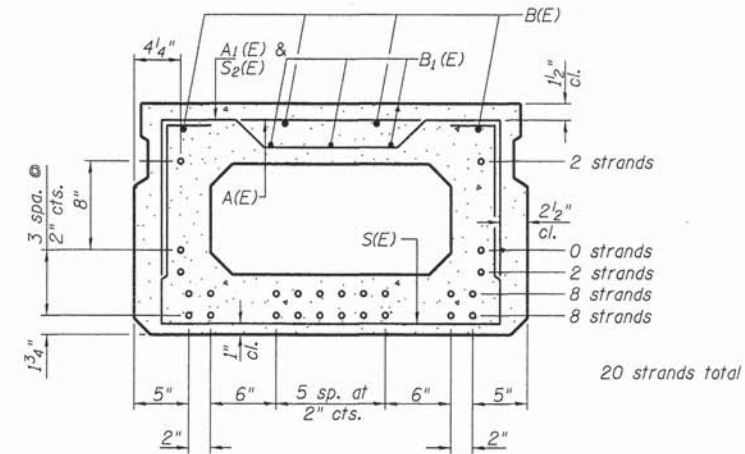
SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW



SECTION B-B

(Showing reinforcement and permissible strand locations)

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	15	#4	2'-7"	—
A1(E)	30	#4	2'-10"	—
B(E)	8	#5	26'-2"	—
B1(E)	6	#4	25'-11"	—
S(E)	67	#4	6'-5"	—
S1(E)	8	#4	4'-11"	—
S2(E)	59	#4	5'-2"	—
S3(E)	8	#4	4'-6"	—
S4(E)	8	#4	3'-9"	—
U(E)	8	#5	4'-0"	—
U1(E)	4	#4	5'-9"	—

Note: See Sheet 6 for additional details and Bill of Material.

Notes:
Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

Bars indicated thus: 4x3-#5 etc. indicates 4 lines of bars with 3 lengths per line.

MINIMUM BAR LAP

#4 bar = 2'-0"
#5 bar = 2'-6"

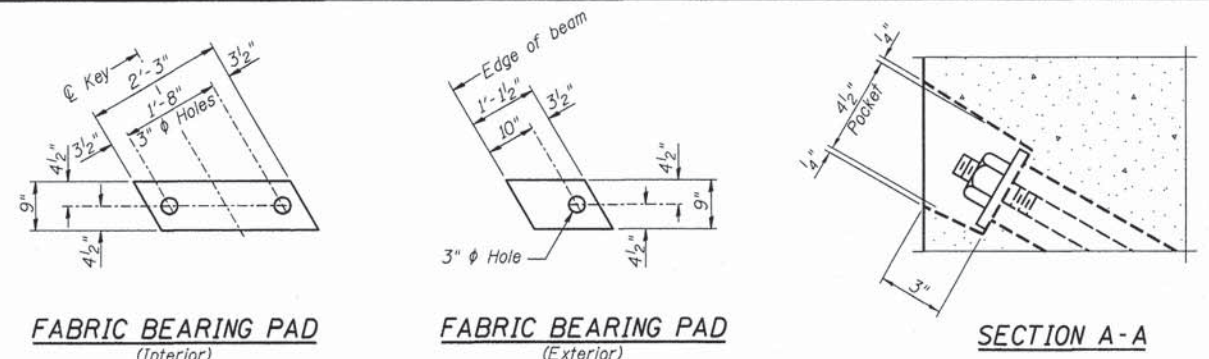
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FRESBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED -	BLT	REVISED -	
CHECKED -	WDL	REVISED -	
DRAWN -	JN	REVISED -	
DATE -	12/12/2013	REVISED -	

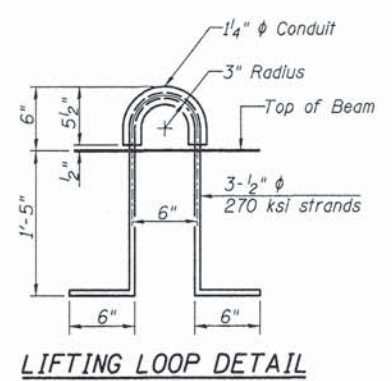
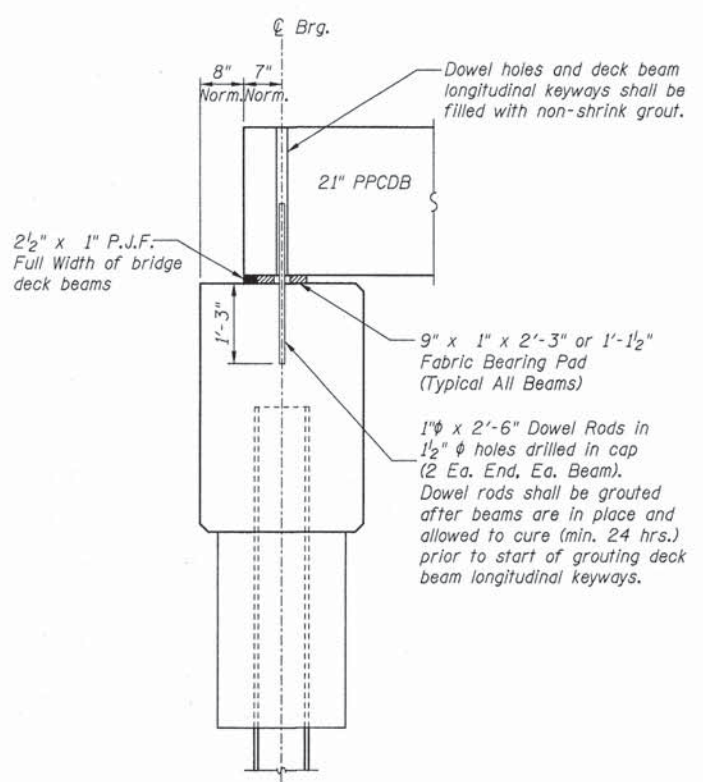
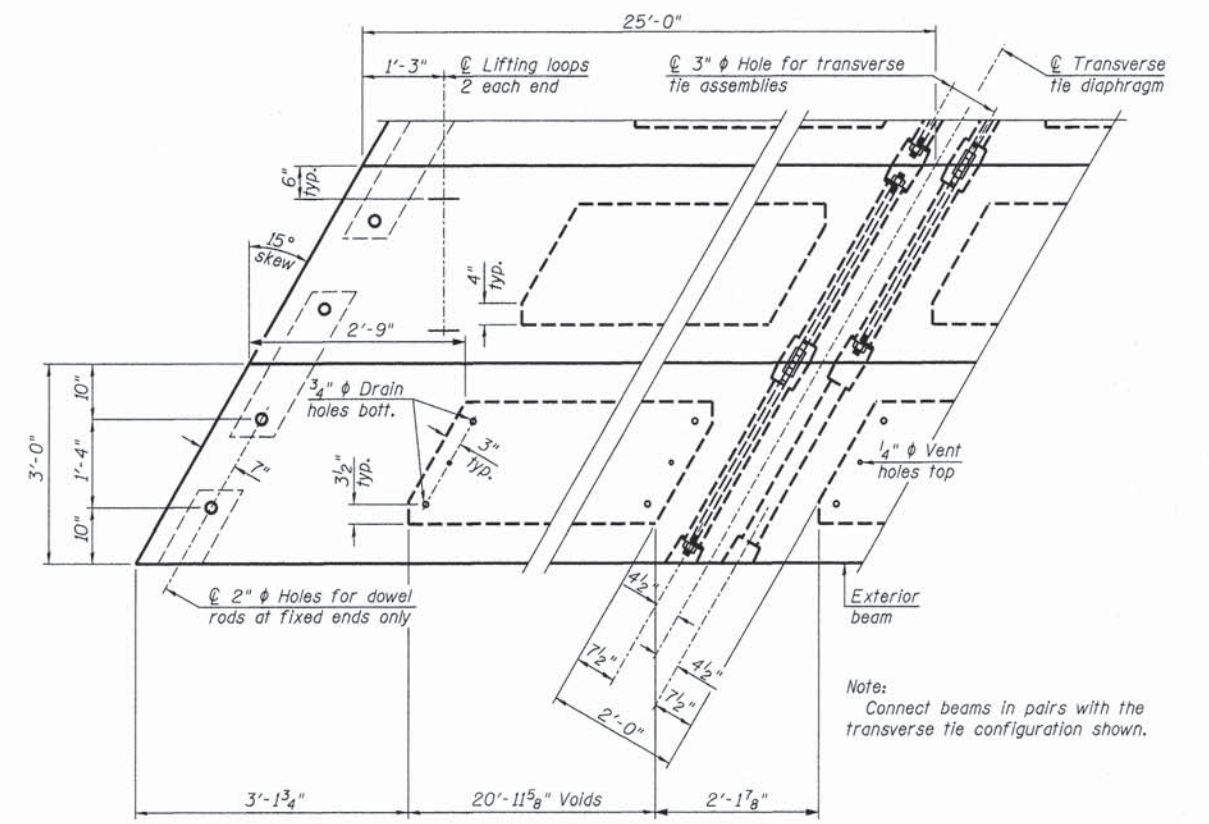
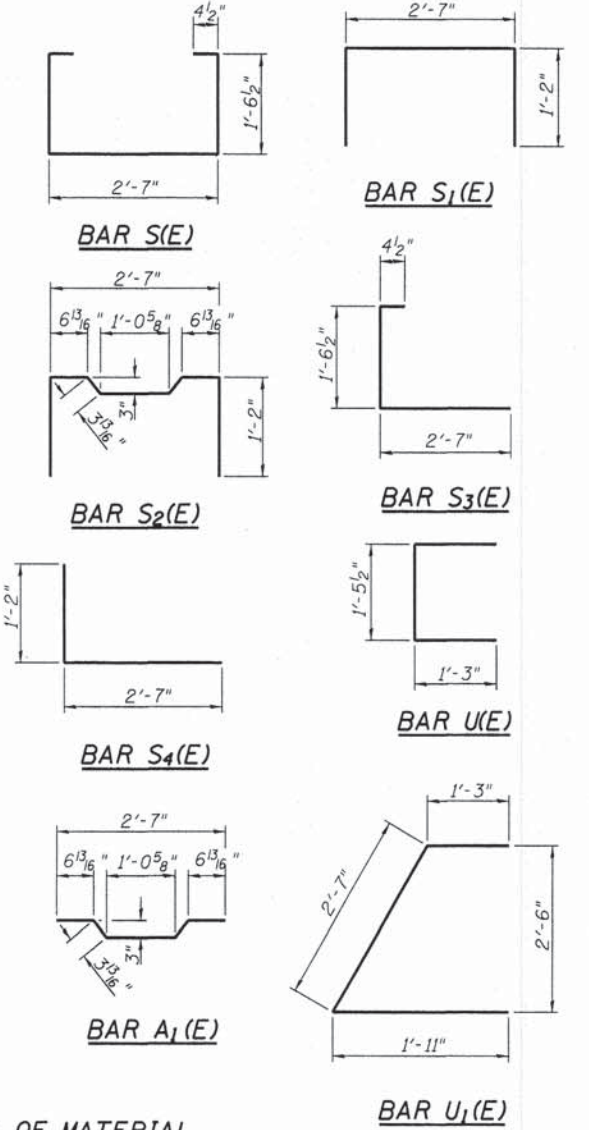
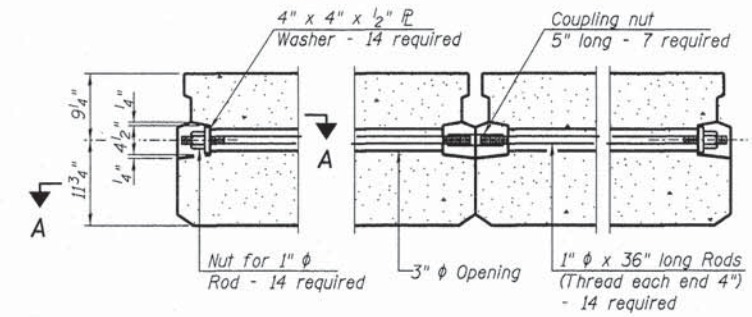
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS
STRUCTURE NO. 013-3240

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 280	09-05103-00-BR	CLAY	11	5
RAAT JOB NO. 52011			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 95727	



Notes:
 All bearing pads shall be 1" thick.



NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" φ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

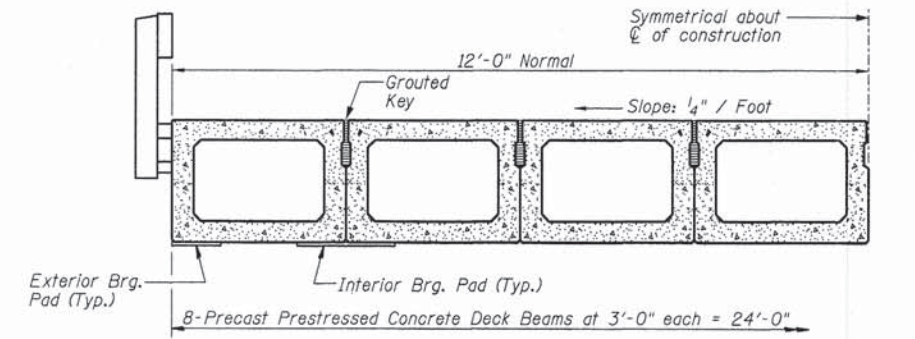
Reinforcement bars shall conform to ASTM A 706, Grade 60. (Illinois modified). Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2 1/2" φ lifting pin shall be used to engage the lifting loops during handling.

Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'_c, shall be 6000 psi.

Compressive strength of prestressed concrete at release, f'_{ci}, shall be 5000 psi.



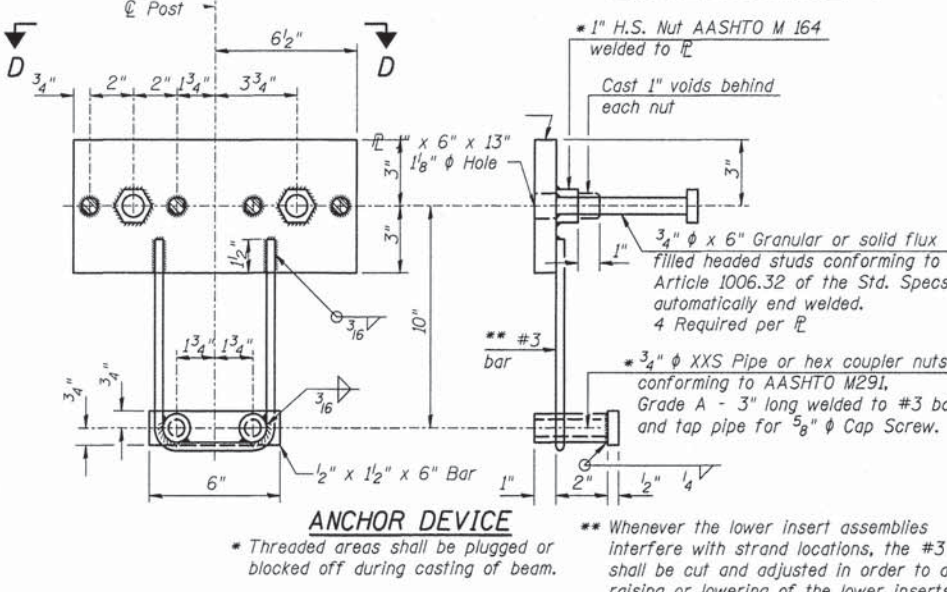
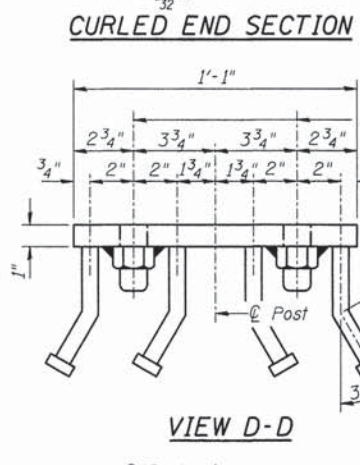
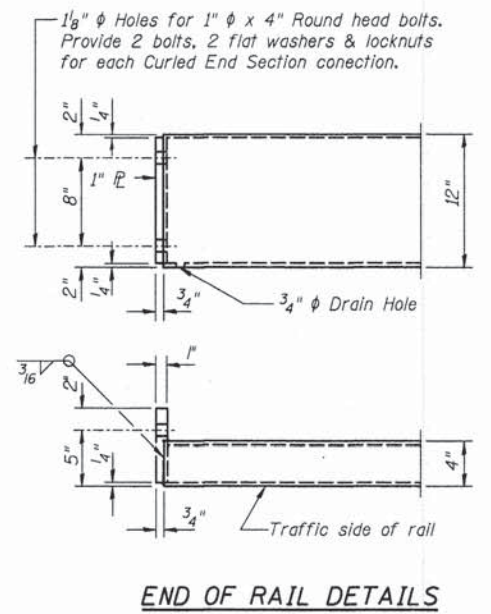
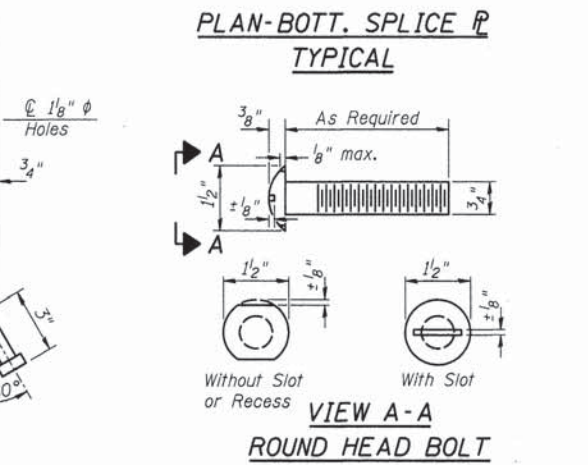
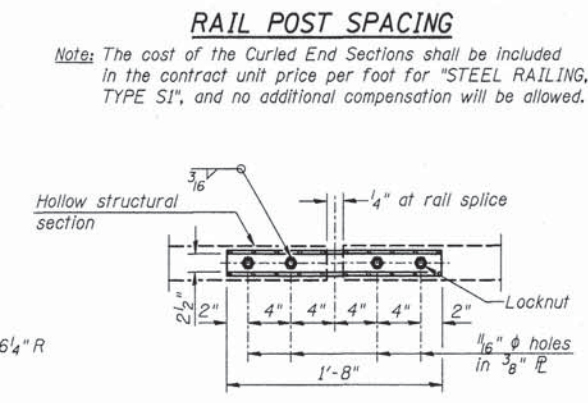
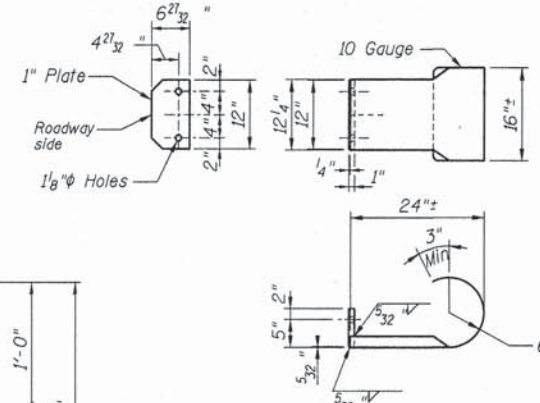
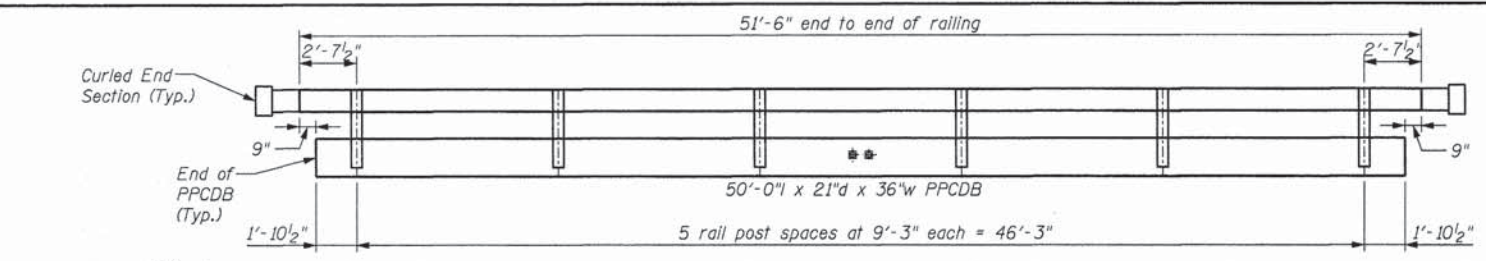
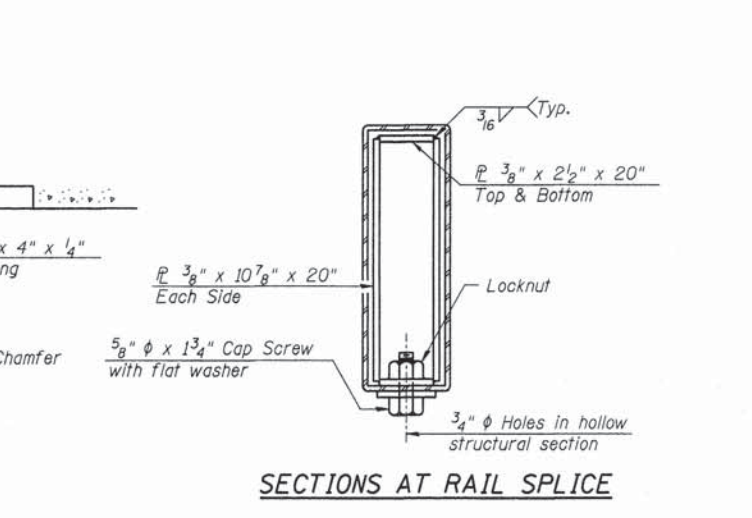
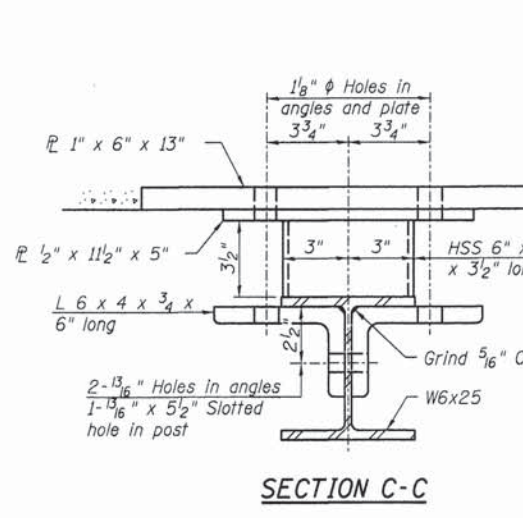
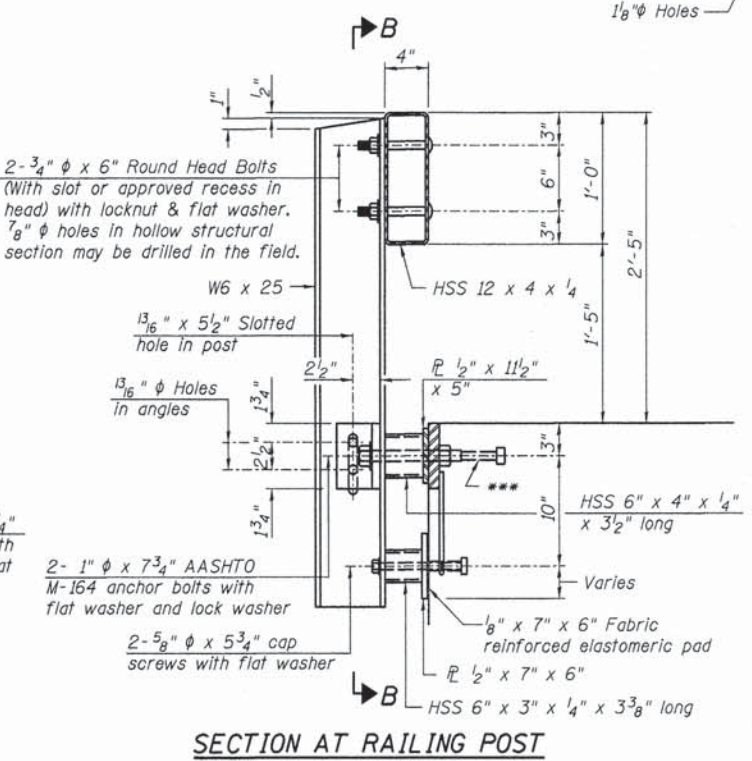
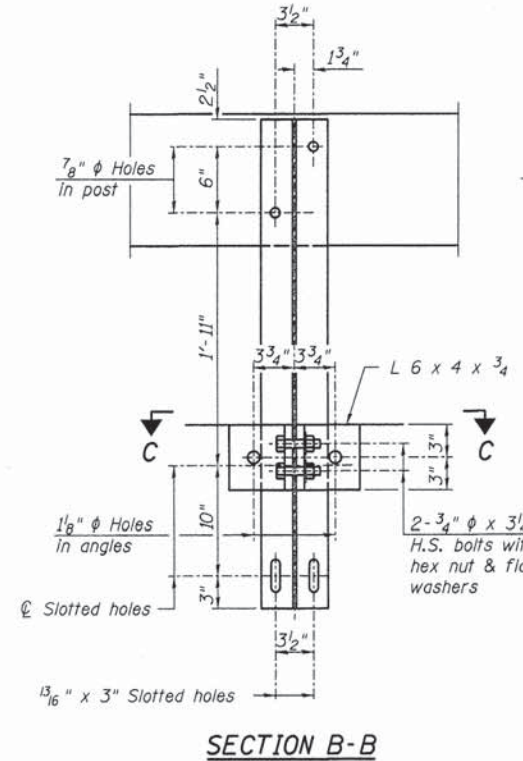
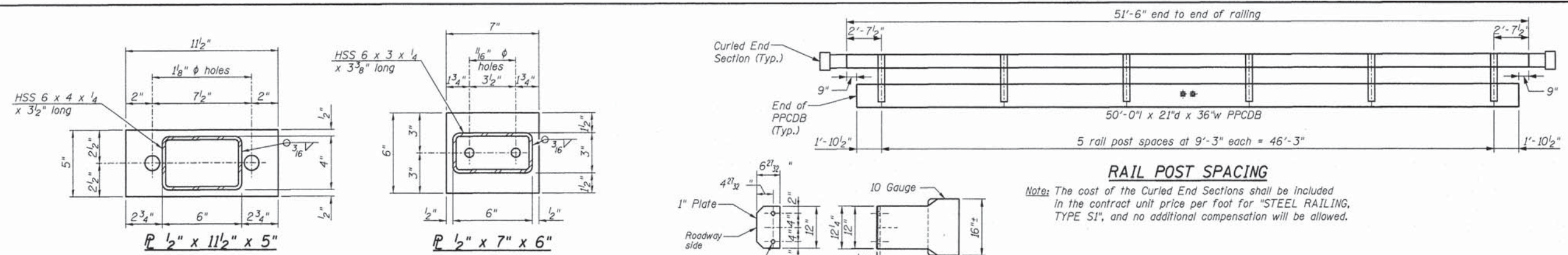
RHUTASEL and ASSOCIATES, INC.
 CONSULTING ENGINEERS • LAND SURVEYORS
 CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
 ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT	REVISED -
CHECKED - WDL	REVISED -
DRAWN - JN	REVISED -
DATE: - 12/12/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS
STRUCTURE NO. 013-3240

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 280	09-05103-00-BR	CLAY	11	6
CONTRACT NO. 95727				
RAAT JOB NO. 52011		ILLINOIS FED. AID PROJECT		



Notes:
 All field drilled holes shall be coated with an approved zinc rich paint before erection. For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S1. All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
 *** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	103

RHUTASEL and ASSOCIATES, INC.
 CONSULTING ENGINEERS • LAND SURVEYORS
 CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
 ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

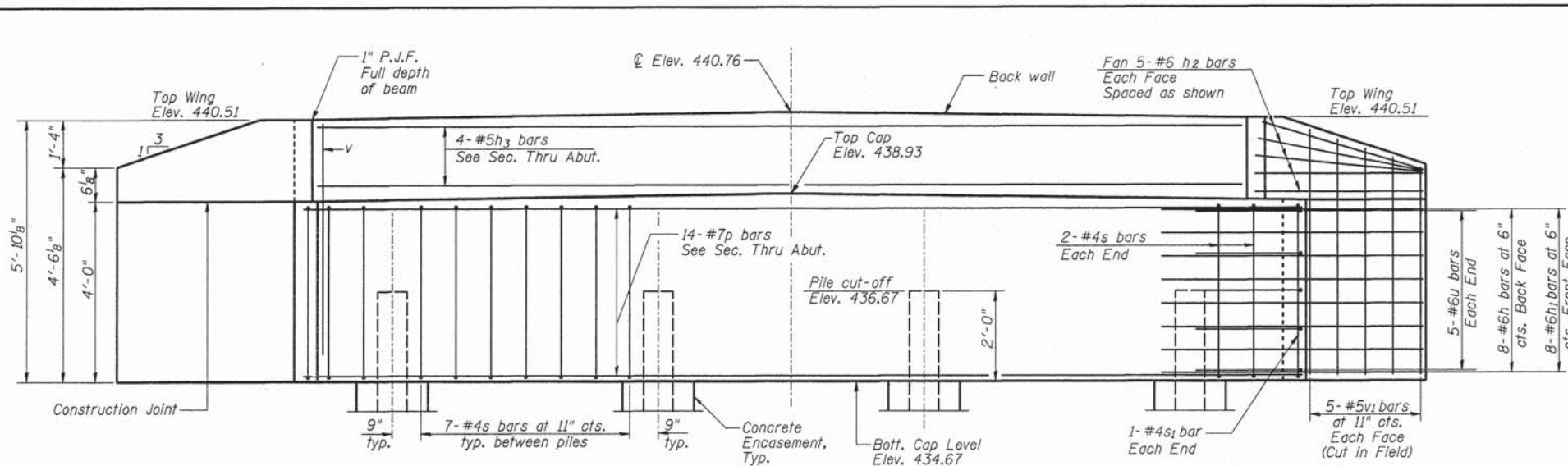
DESIGNED - BLT
 CHECKED - WDL
 DRAWN - JN
 CHECKED - 12/12/2013

REVISED -
 REVISED -
 REVISED -
 REVISED -

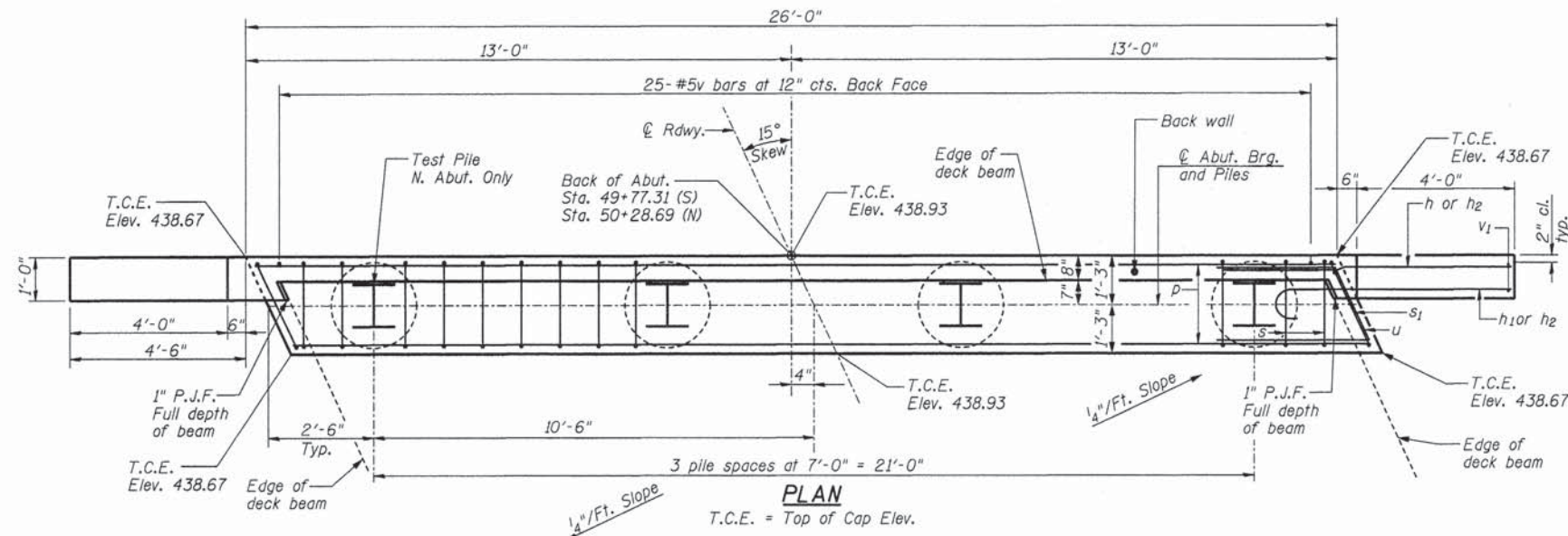
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE S1 DETAILS
STRUCTURE NO. 013-3240

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 280	09-05103-00-BR	CLAY	11	7
CONTRACT NO. 95727				
RAAI JOB NO. 52011 ILLINOIS FED. AID PROJECT				



ELEVATION



PLAN

PILE DATA SOUTH ABUTMENT

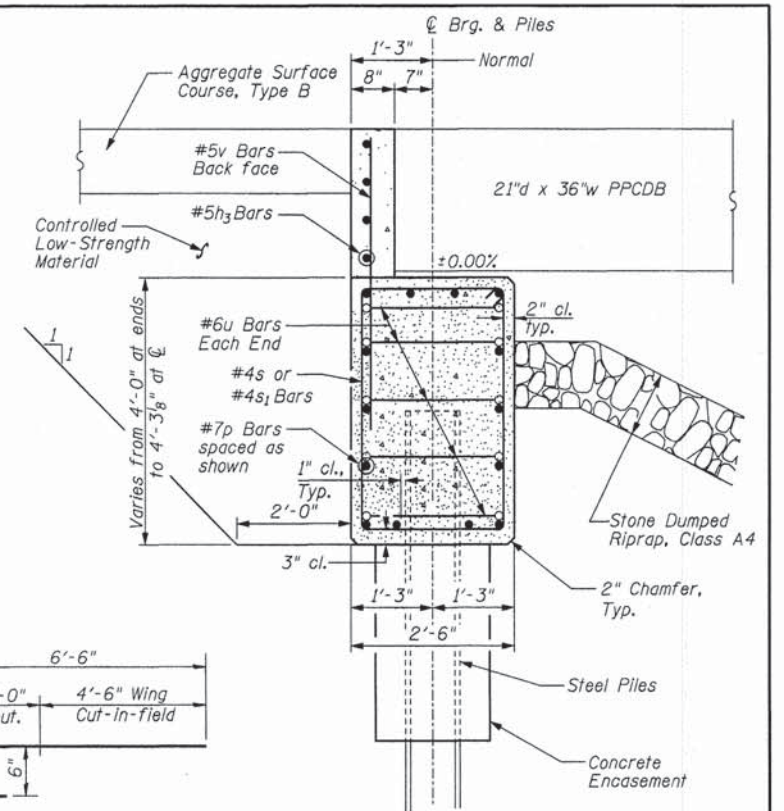
Type: Steel HP12x53 w/Pile Shoes
 Nominal Required Bearing: 418 kips
 Factored Resistance Available: 230 kips
 Estimated Length: 32'/pile
 No. Production Piles w/Pile Shoes: 4
 No. Test Piles w/Pile Shoes: 0

PILE DATA NORTH ABUTMENT

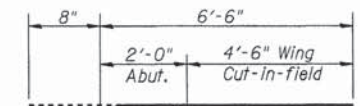
Type: Steel HP12x53 w/Pile Shoes
 Nominal Required Bearing: 418 kips
 Factored Resistance Available: 230 kips
 Estimated Length: 32'/pile
 No. Production Piles w/Pile Shoes: 3
 No. Test Piles w/Pile Shoes: 1

GENERAL NOTES

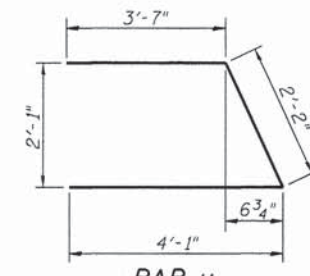
- All exposed edges shall have standard $\frac{3}{4}$ " chamfer, unless otherwise noted.
- All clearances between rebar and form surface shall be 2", unless otherwise noted.
- Space reinforcement in cap to miss PPCDB dowel rods.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60 (IL Modified).
- The Steel H-piles shall be according to AASHTO M270 Grade 50.
- The Contractor is hereby advised that very stiff soils may be encountered prior to the location of anticipated nominal required bearing. See the soil borings for further information.
- The Contractor shall drive one (1) Steel HP12x53 Test Pile in a permanent location at the North abutment as directed by the Engineer before ordering the remainder of the piles.
- The Test Pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.
- The back wall and portion of the wingwalls above the construction joint shall be cast against the in-place deck beams.



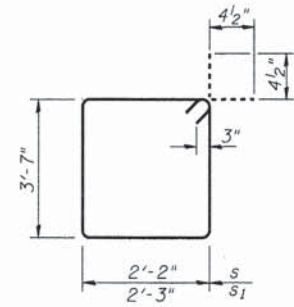
SECTION THRU ABUTMENT
(Normal to centerline)



BAR h1



BAR u



BAR s & s1

BILL OF MATERIAL (FOR ONE ABUTMENT)

Bar	No.	Size	Length	Shape
h	16	#6	8'-0"	—
h1	16	#6	7'-2"	Cut in Field
h2	20	#6	4'-9"	—
h3	4	#5	24'-6"	—
p	14	#7	25'-8"	—
s	25	#4	12'-3"	□
s1	2	#4	12'-5"	□
u	10	#6	9'-10"	△
v	25	#5	3'-10"	—
v1	20	#5	5'-6"	Cut in Field
Concrete Structures		Cu. Yd.	12.9	
Concrete Encasement		Cu Yd	S. Abut. 1.4 N. Abut. 1.4	
Reinforcement Bars		Pound	1930	
Furnishing Steel Piles, HP12x53		Foot	S. Abut. 128 N. Abut. 96	
Driving Piles		Foot	S. Abut. 128 N. Abut. 96	
Test Pile Steel HP12x53		Each	S. Abut. 0 N. Abut. 1	
Pile Shoes		Each	S. Abut. 4 N. Abut. 4	

See Sheet 9 for pile and concrete encasement details.

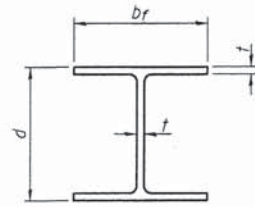
RHUTASEL and ASSOCIATES, INC.
 CONSULTING ENGINEERS • LAND SURVEYORS
 CENTRALIA, ILLINOIS
 ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT	REVISED -
CHECKED - WDL	REVISED -
DRAWN - JN	REVISED -
CHECKED - 12/12/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

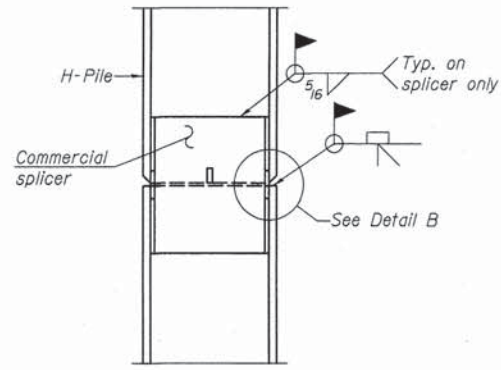
ABUTMENT DETAILS
STRUCTURE NO. 013-3240

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 280	09-05103-00-BR	CLAY	11	8
CONTRACT NO. 95727				
RAAI JOB NO. 52011 ILLINOIS FED. AID PROJECT				

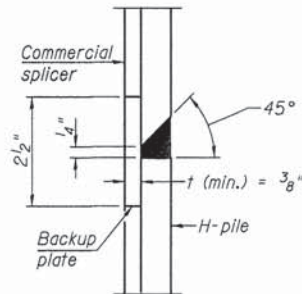


STEEL PILE TABLE

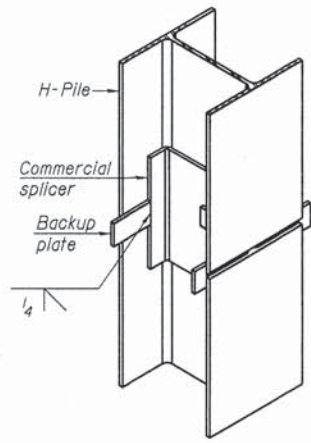
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION

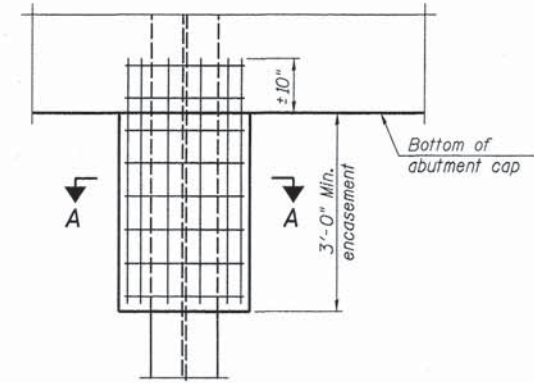


DETAIL "B"

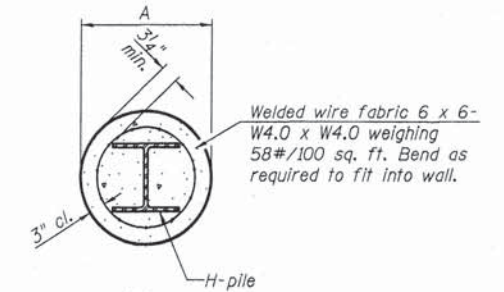


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



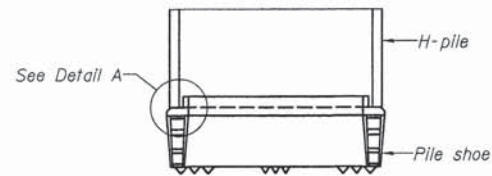
ELEVATION



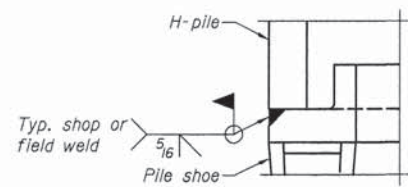
SECTION A-A

PILE ENCASEMENT

Note: Forms for encasement may be omitted when soil conditions permit.

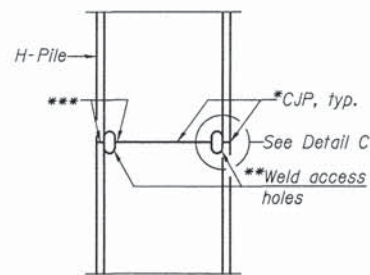


ELEVATION

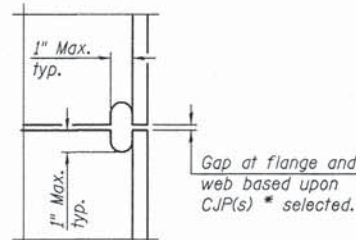


DETAIL A

H-PILE SHOE ATTACHMENT

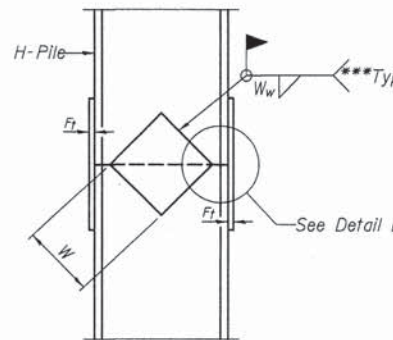


ELEVATION

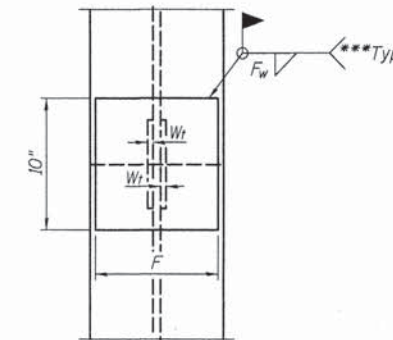


DETAIL C

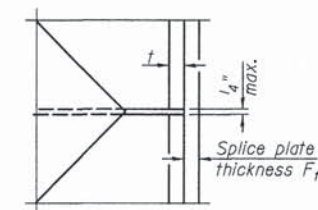
COMPLETE PENETRATION WELD SPLICE



ELEVATION



END VIEW



DETAIL D

WELDED PLATE FIELD SPLICE

Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

* Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.

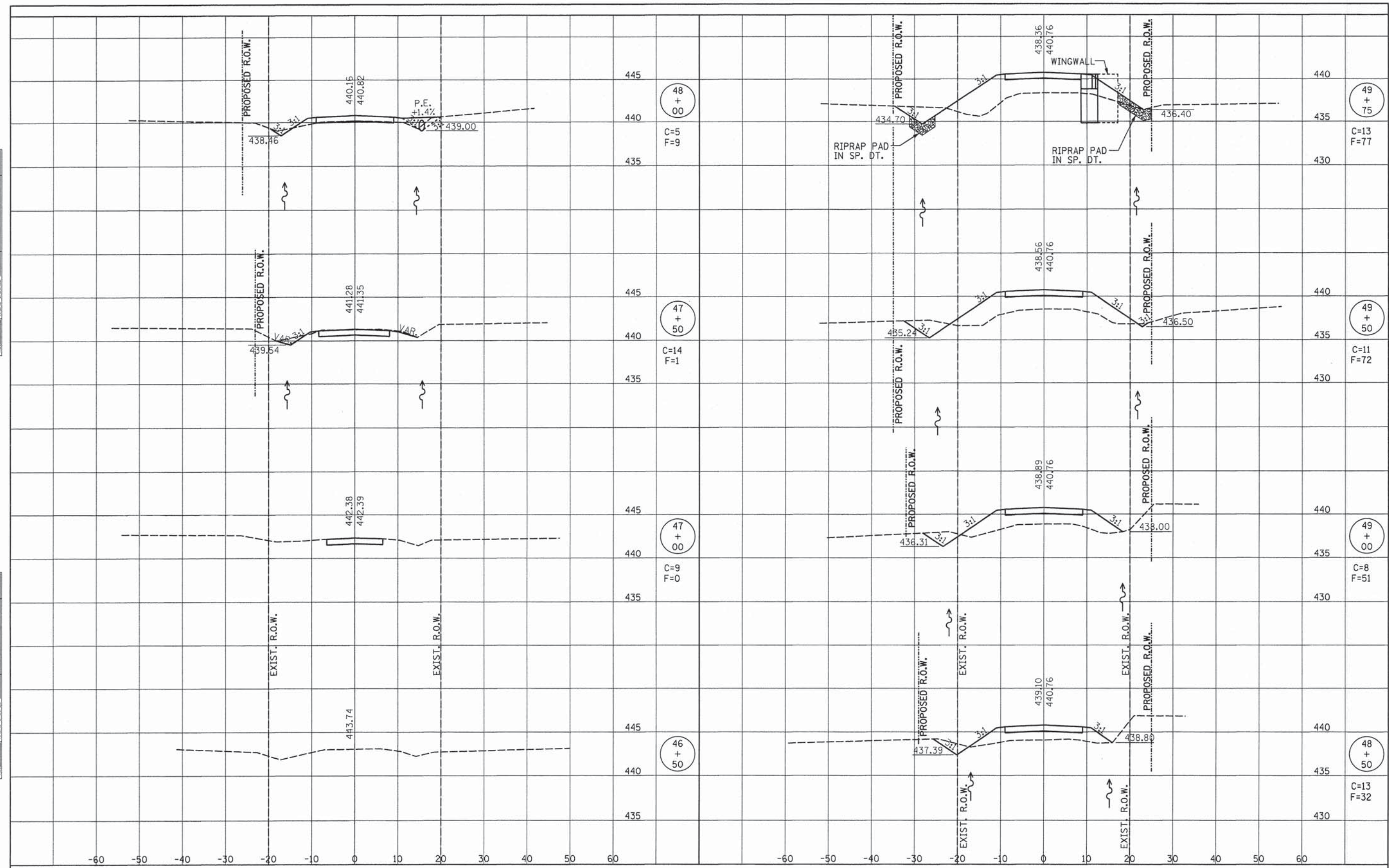
** Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.

*** Interrupt welds 1/4" from end of each pile.

Note: The steel H-piles shall be according to AASHTO M270 Grade 50.

DATE	
BY	
FINAL SURVEY	
NOTE BOOK	
TEMPLATE	
AREAS CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
NOTE BOOK	
TEMPLATE	
AREAS CHECKED	
NO.	



RHUTASEL and ASSOCIATES, INC.
 CONSULTING ENGINEERS • LAND SURVEYORS
 CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
 ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED -	BLT	REVISED -	
DRAWN -	JN	REVISED -	
CHECKED -	GLH	REVISED -	
DATE -	12/12/2013	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

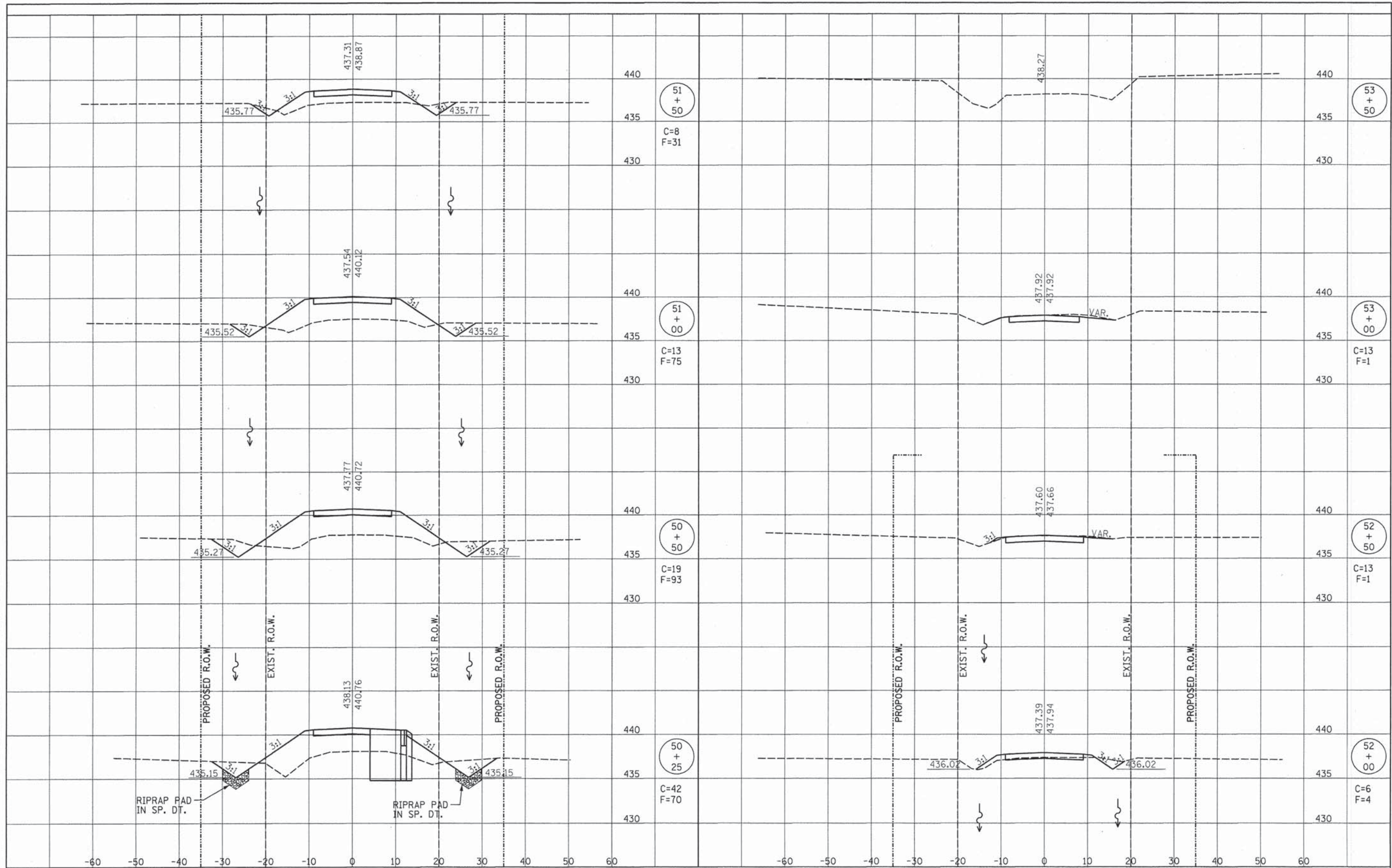
CROSS SECTIONS OF ROADWAY
STRUCTURE NO. 013-3240

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 280	09-05103-00-BR	CLAY	11	10
RAAT JOB NO. 52011			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 95727	

STA. 46+50 TO STA. 49+75

DATE	
BY	
FINISHED SURVEY	
PLOTTED	
NOTE BOOK	
NO.	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
PLOTTED	
NOTE BOOK	
NO.	
AREAS CHECKED	



RHUTASEL and ASSOCIATES, INC.
 CONSULTING ENGINEERS • LAND SURVEYORS
 CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
 ILLINOIS DESIGN FIRM LICENSE NO. 164-000287

DESIGNED -	BLT	REVISED -	
DRAWN -	JN	REVISED -	
CHECKED -	GLH	REVISED -	
DATE -	12/12/2013	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS OF ROADWAY
STRUCTURE NO. 013-3240

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 280	09-05103-00-BR	CLAY	11	11
RAAI JOB NO. 52011			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 95727	

STA. 50+25 TO STA. 53+50